

## DESCRIPTION

Demonstration circuit 1235 is a dual-output stepdown power supply. The input voltage is from 4.5V to 32V. The supply has two outputs: 3.3V/5A<sub>MAX</sub> and 8.5V/3.5A<sub>MAX</sub>. When the input voltage is

close to the output voltage, the supply is in dropout mode. The design features the LTC3826-1, the low quiescent current, 2-phase, dual-output synchronous buck regulator.

**Table 1. Performance Summary**

PARAMETER	CONDITION	VALUE
Input Voltage Range	If the input voltage must exceed 32V, use higher voltage rating input capacitors. The IC works up to 36V. Minimum of 9V input is needed for 8.5V output regulation at 3A load.	4.5V to 32V
Outputs	V <sub>OUT1</sub> = 3.3V, 0A to 5A	3.3V ± 2%
	V <sub>OUT2</sub> = 8.5V, 0A to 3.5A, V <sub>IN</sub> >9V	8.5V ± 2%
Typical Output Ripple (V <sub>OUT1</sub> )	20MHz BW, 5A load, V <sub>IN</sub> = 32V, frequency = 390kHz	35mV <sub>p-p</sub>
Typical Output Ripple (V <sub>OUT2</sub> )	20MHz BW, 3.5A load, V <sub>IN</sub> = 32V, frequency = 390kHz	30mV <sub>p-p</sub>
Typical Operating Frequency	PLLLPF floating (position JP1 to 390KHz)	390kHz
Typical input current@no load	CH1 on, no load, CH2 off, frequency=390kHz, V <sub>IN</sub> =16V. Burst Mode	55 uA
Efficiency for Vout1	V <sub>IN</sub> =12V, Vout1=3.3V at 3.5A, Fs=390KHz	94%
Efficiency for Vout2	V <sub>IN</sub> =12V, Vout2=8.5V at 2.5A, Fs=390kHz	98%

## - TEST PROCEDURE

Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

1. Set the power supply jumper's as shown on Table 2 below.

JP1	JP2	JP3	JP4	JP5	JP6
FREQ	PLL/MODE	RUN1	RUN2	TRACK1	TRACK2
390kHz	BURST	ON	ON	SS1	SS2

Table 2 Default Jumper setting

2. Connect the input power supply to the VIN and GND terminals on the right, center of the board.

**NOTE:** Do not increase V<sub>IN</sub> over 32V.

3. With the input voltage set at approximately 20 volts, check that the input current is below 100uA (Typically 85uA).

4. Connect the desired loads to the 3.3V (5 amps) and 8.5V (3.5 amps) terminals and their closest PGND terminals on the board.

5. Measure the output voltages. They should be 3.3V ±0.066V and 8.5V ±0.17V at 0 amps and full load.

6. Input current with both outputs at full load should be about 2.5A with 20 Vin.

7. Check the default jumper position after finishing the test evaluation of the board.

**NOTE:** The maximum load at 3.3V is 5A, and the maximum at 8.5V is 3.5A.

# QUICK START GUIDE FOR DC1235

## LOW QUIESCENT CURRENT DUAL SYNCHRONOUS BUCK CONVERTER

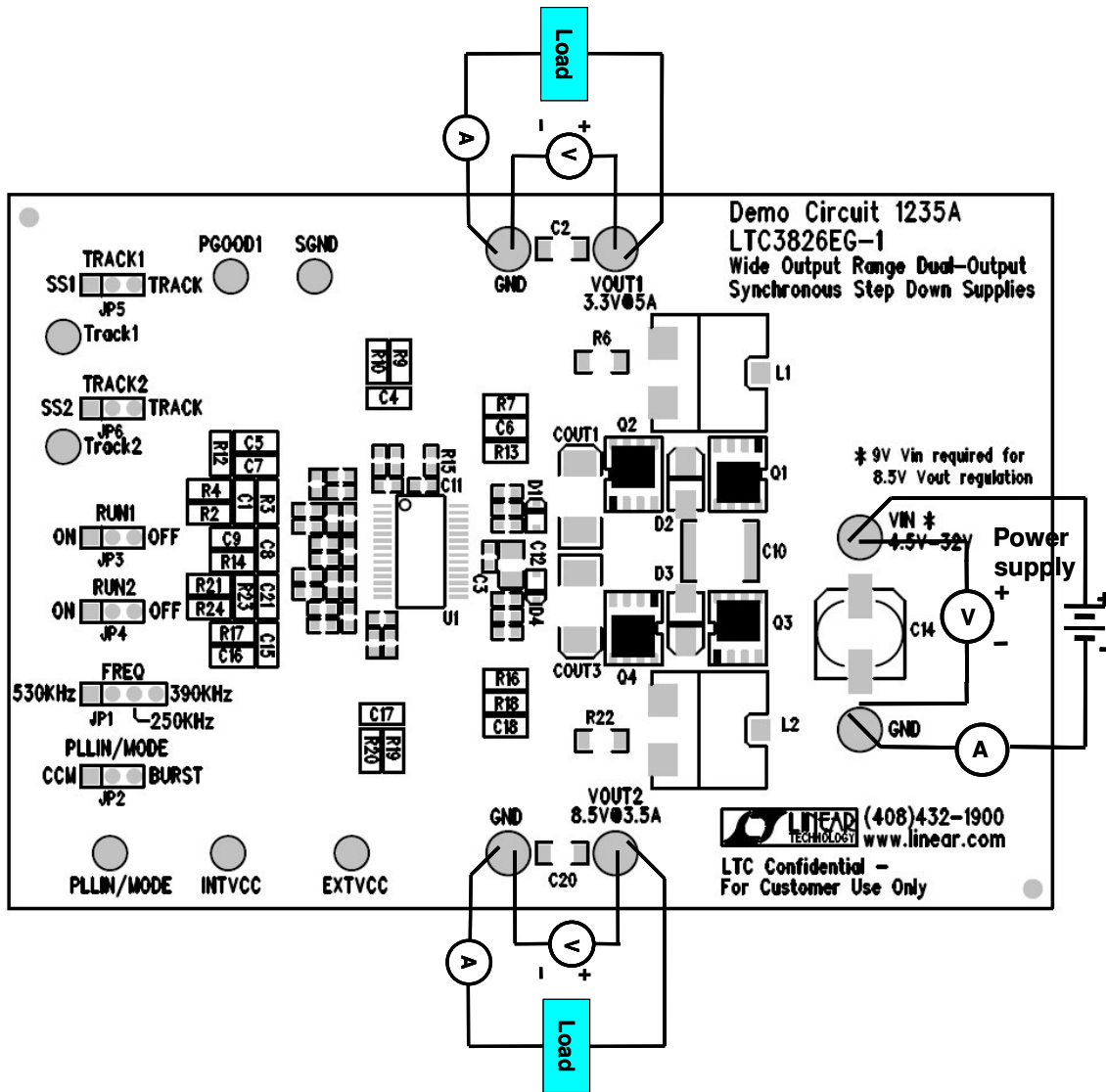


Figure 1. Proper Measurement Equipment Setup

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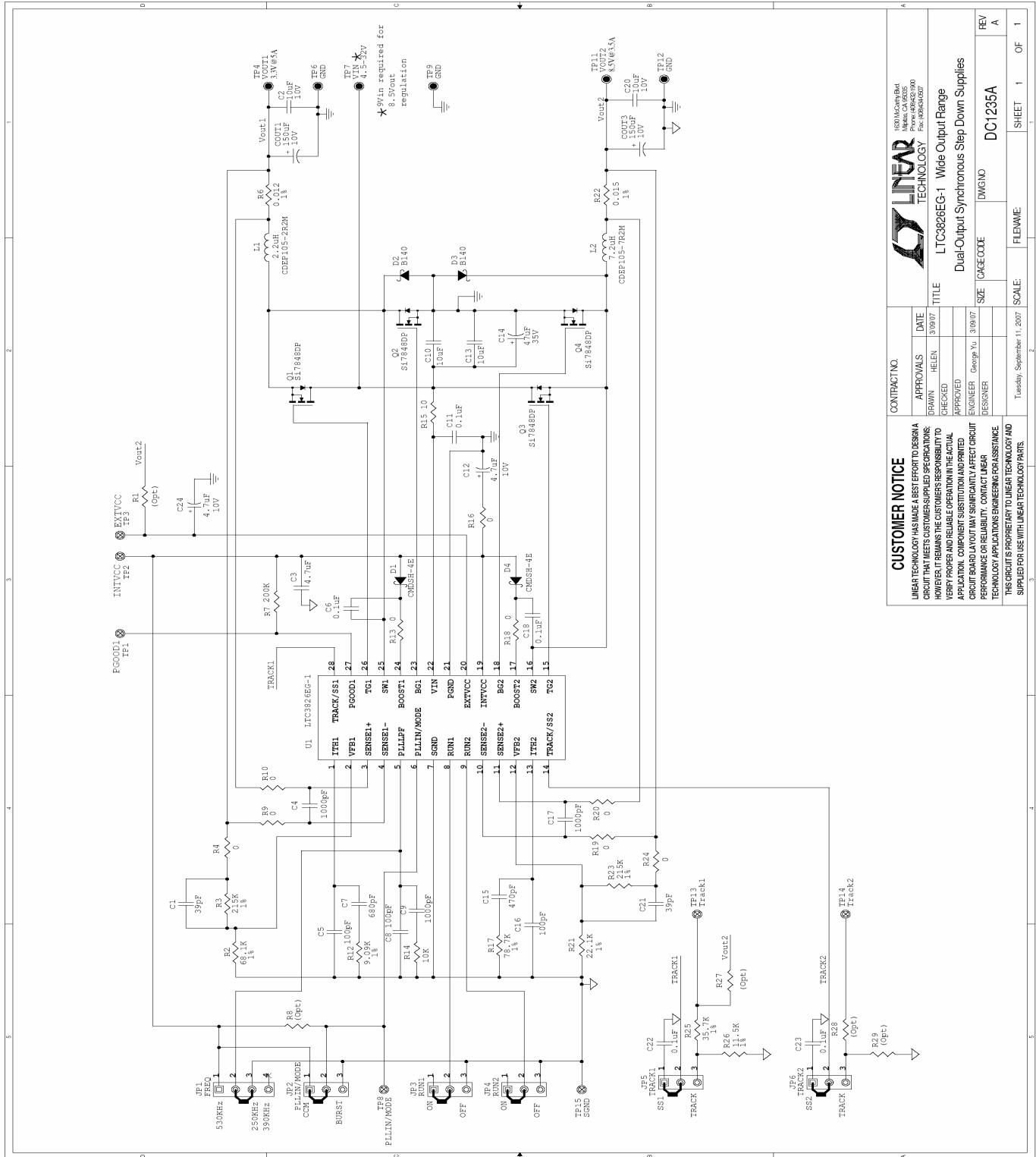


Figure 2. LTC3826 demo circuit DC1235 circuit schematic

CONTRACT NO.		APPROVALS	DATE
		DRAWN: HELEN	3/19/07
		CHECKED:	
		APPROVED:	
		ENGINEER: George Yu	3/19/07
		DESIGNER:	

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REV	DESCRIPTION	DATE
A	DC1235A	11/11/07

FILE NAME	SCALE	SHEET	OF
DC1235A	1:1	1	1